

FRENCH REPUBLIC  
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DUAL-FUNCTION VAGINAL OR ANAL ENDOCAVITARY PROBE

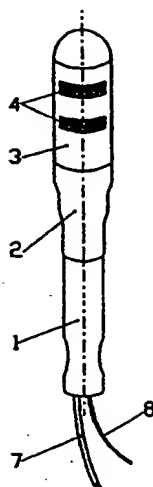
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| Applicant: | André Mamberti-Dias, - FR |
| Agent:     | Roman Law Firm            |

List of documents mentioned in the preliminary search report: Refer to the end of this section.

The subject of the present invention is a dual-function vaginal or anal endocavitary probe. It is made up of the combination of three separate parts:

- the body of the probe or base (1) which is provided for receiving the removable parts and which is connected to the recording and stimulation apparatus by pneumatic and possibly electric connection,
- a part called the module (2), inflatable, which exists in several interchangeable versions intended for the different pathologies or for morphologically different cavities,
- disposable treatment envelope (3) covering said module and containing stimulation electrodes suited to the envisaged uses.

It applies to the medical domain and is intended for electromyographic recordings of the internal vaginal or anal musculature, as well as for stimulation of this same musculature for therapeutic purposes.



The subject of the present invention is a dual-function vaginal or anal endocavitary probe.

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To this day, recording or stimulation is done with the same probe in the form of a single piece, and there is no specific probe for one technique or the other. It is impossible to carry out stimulation and recording simultaneously, since the probes – which are rigid – only function in one direction or the other.

Furthermore, because of the cost of these probes on the current market (between 200 and 300 Francs, not reimbursed by Social Security), it is only with difficulty that patients can purchase a personal probe. Finally, it should be indicated that, in daily practice, therapists tend – because of profitability considerations – to use the same probe for different patients, after cold disinfection by soaking, which is not very reliable given the multiple infections by vaginal or anal route: spores, bacteria, viruses (HIV, hepatitis B), fungi, etc.

The device according to the present invention eliminates all these disadvantages. In effect, it makes it possible to do recording and stimulation simultaneously, and the so-called cavitory part is a removable, dual-function and disposable part, and is therefore expendable after each session.

It is made up of the combination of three separate parts:

- the body of the probe or base which is provided for receiving the removable parts and which is connected to the recording and stimulation apparatus by pneumatic and possibly electric connection,

- a part called the module, inflatable, which exists in several interchangeable versions intended for the different pathologies or for morphologically different cavities,

- a disposable treatment envelope covering said module and containing stimulation electrodes suited to the envisaged uses.

In the appended diagrammatic drawings, given as non-limiting examples of embodiments of the subject of the invention:

Figure 1 represents the whole probe, ready for use, with its three elements assembled, Figure 2 shows the base or body of the probe, Figures 3 and 4 show a module respectively at rest and inflated, and, in Figures 5 to 7, examples of expendable envelopes with different types of electrodes can be seen.

These drawings are only intended to facilitate comprehension of the principle of the invention.

The device, Figures 1 to 7, is made up of base 1 which constitutes the body of the probe, of removable inflatable module 2 which is attached on said base, and of disposable treatment envelope 3 which is slipped on the inflatable module.

This treatment envelope is manufactured out of a flexible material such as elastomer or vinyl derivative, and, on its exterior surface, it has stimulation electrodes 4 provided with connecting conductors 5 which can be connected to the stimulation or recording installation either directly or by the intermediary of base 1 and/or module 2 which in this case has connectors for this purpose. The electrodes, whose number and form are determined by the use for which the envelope is intended, can be made of a bonded metallic foil or of conducting ink, or else of thin film 6 of the type used in electronics on which not only the contact zones but also connecting conductors 5 will be printed (Figure 6), allowing one to arrive at a particularly low cost.

The treatment envelope can possibly be used for covering the penetration end of existing rigid probes.

Base 1, preferably made of synthetic material, is equipped with tube 7 for pneumatic connection with a recording or stimulation system, and possibly with electric cable 8 allowing one to ensure the connection of electrodes 4 with the installation.

Inflatable module 2 is made of rubber (latex) or polymer and is designed so that it can be mounted in a sealed manner on base 1. The practitioner will be able to have at his disposal several modules whose forms will be a function of the morphologies of the cavities to be treated and of the different pathologies.

The advantage of the modular part is that it is intended to receive disposable treatment envelopes 3, thus solving all the problems of spreading sexually transmittable diseases. Furthermore, it should be stressed that the base is never in contact with the mucosa of the patients.

The practitioner will have base 1 and the different modules 2 in his office. The patient will purchase the envelopes which fit onto the modules as a function of his treatment.

The positioning of the various constitutive elements gives the subject of the invention the maximum of useful effects which have not to this day been obtained by similar devices.

### Claims

1. A vaginal or anal endocavitary probe intended for electromyographic recording of the internal vaginal or anal musculature, as well as for stimulation of this same musculature for therapeutic purposes, characterized in that the part penetrating the cavity is covered with a disposable treatment envelope (3) manufactured out of a flexible material such as elastomer or vinyl derivative and having, on its exterior surface, electrodes (4) whose number and form are determined by the use for which said envelope is intended, these electrodes, produced based on bonded metallic foil, conducting ink or the like, being provided with connecting conductors (5) which can be connected to the stimulation or recording installation using ad hoc connectors provided for this purpose on the installation itself or on the probe.

2. A device according to Claim 1, characterized by the fact that the probe is made up of base (1) which constitutes the body of the probe, of removable inflatable module (2) produced out of rubber or polymer and designed so that it can be mounted in a sealed manner on base (1), said inflatable module receiving disposable treatment envelope (3).

3. A device according to Claim 2, characterized by the fact that base (1) is equipped with tube (7) for pneumatic connection with a recording or stimulation system.

4. A device according to either of Claims 2 and 3, characterized by the fact that base (1) is equipped with electric cable (8) making it possible to ensure the connection of electrodes (4) with the installation thanks to connectors receiving connecting conductors (5).

5. A device according to any one of Claims 2 to 4, characterized by the fact that inflatable module (2) exists in several interchangeable versions intended for the different pathologies or for morphologically different cavities.

6. A device according to any one of the preceding claims, characterized by the fact that electrodes (4) of treatment envelope (3) are manufactured using thin film (6) of the type used in electronics on which not only the contact zones but also connecting conductors (5) are printed.

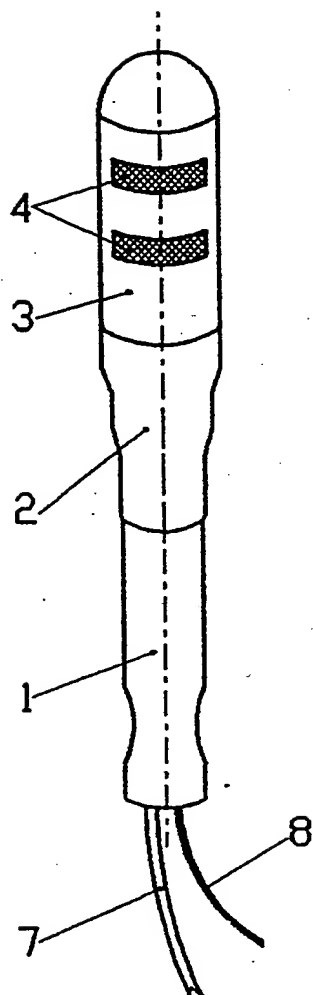


Fig. 1

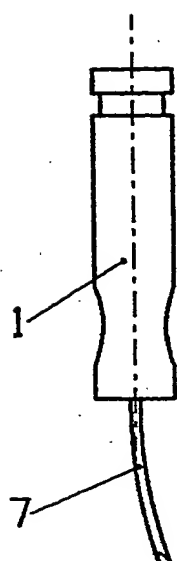


Fig. 2

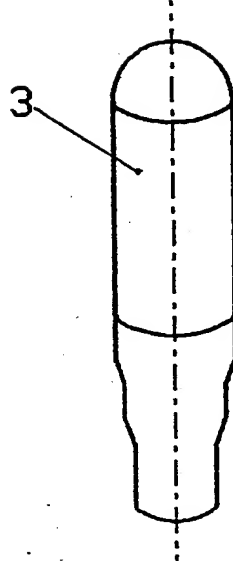


Fig. 3

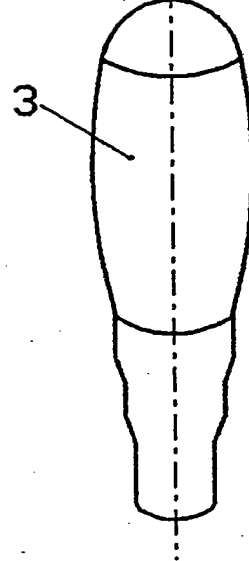


Fig. 4

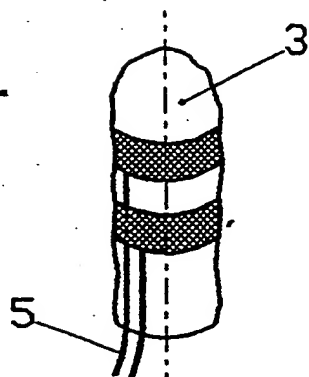


Fig. 5

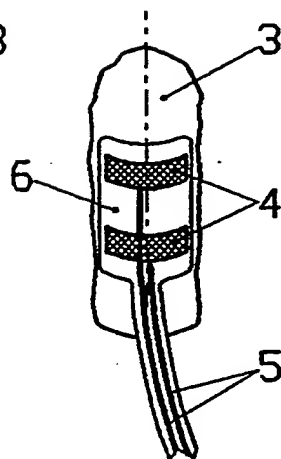


Fig. 6

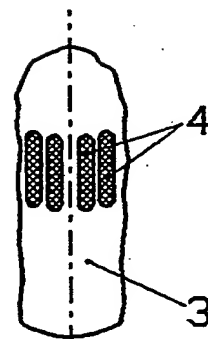


Fig. 7

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Application Number  
FR 9208648  
FA 474918

**SEARCH REPORT**  
established on the basis of the most  
recent claims filed before the start  
of the search

| DOCUMENTS CONSIDERED TO BE RELEVANT                                              |                                                                                 | Claims<br>concerned<br>in the<br>examined<br>document                 |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Category                                                                         | Citation of document with indication where appropriate, of<br>relevant passages |                                                                       |
| Y                                                                                | WO-A-9 012 617 (B.V. ENRAF-NONIUS DELFT)<br>* the whole document *<br>---       | 1,4,5                                                                 |
| Y                                                                                | EP-A-0 263 466 (EMPI, INC)<br>* the whole document *                            | 1,4,5                                                                 |
| A                                                                                | ---                                                                             | 6                                                                     |
| A                                                                                | US-A-4 784 158 (P.M. OKIMOTO)<br>* the whole document *                         | 1                                                                     |
| A                                                                                | FR-A-2 622 458 (MAZET ELECTRONIQUE)<br>* the whole document *                   | 1                                                                     |
| A                                                                                | US-A-4 953 563 (H. KAISER ET AL.)<br>* the whole document *                     | 2                                                                     |
| A                                                                                | EP-A-0 411 632 (EMPI, INC)<br>* the whole document *<br>-----                   | 6                                                                     |
|                                                                                  |                                                                                 | TECHNICAL FIELDS<br>SEARCHED (Int. Cl. <sup>5</sup> )<br>A61N<br>A61B |
| Date of completion of the search<br>February 25, 1993                            |                                                                                 | Examiner<br>FERRIGNO A.                                               |
| CATEGORY OF CITED DOCUMENTS                                                      |                                                                                 |                                                                       |
| X: Particularly relevant if taken alone.                                         |                                                                                 |                                                                       |
| Y: Particularly relevant if combined with another document of the same category. |                                                                                 |                                                                       |
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| P: Intermediate document.                                                        |                                                                                 |                                                                       |
| T: Theory or principle underlying the invention.                                 |                                                                                 |                                                                       |
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| .....                                                                            |                                                                                 |                                                                       |
| &: Member of the same patent family, corresponding document.                     |                                                                                 |                                                                       |